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10/714,384

11/14/2003

Robert Leon Sangroniz

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05/22/2007

ALCATEL INTERNETWORKING, INC.

ALCATEL-INTELLECTUAL PROPERTY DEPARTMENT

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EXAMINER

PARK, JUNG H

ART UNIT

PAPER NUMBER

2616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/714,384

Applicant(s)

SANGRONIZ ET AL.

Examiner

Jung Park

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-22 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 9, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 16-19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.
 - a. In claims 16-19, the Examiner suggests changing "14" into --15--.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-8, 10, 11, 23, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Tang et al. (US 6839348, "Tang").

Regarding claim 1, Tang discloses a multicast optimization method, the method comprising the steps of:

- receiving a multicast stream (a multicast network for a multicast stream, see fig.1 and col.6, ln.57-61) within a first VLAN (a VLAN region, see 102 fig.1) of the plurality of VLANs (VLANs, see 102 & 104 fig.1); and
- internally distributing the multicast stream toward substantially (distributing the stream within VLAN regions, see fig.1 and col.8, ln.12-16) all the multicast group members (VLAN domain groups identified by colors, see fig.1 and col.7, ln.30-37) registered at a

cross-VLAN switching device (registered at multicast network devices, see 122, 124, & 126 fig.1 and fig.3) to receive the multicast stream (as shown in fig.1);

- wherein a single copy of the one or more multicast streams (a single copy of multicast message, see col.19, ln.55-57) propagates across the one or more VLAN-tagged communications links (VLAN-tagged message transmitted in links, see fig.1 and fig.2).

Regarding claim 2, Tang discloses, "the internally distributing step further comprising: (a) internally routing the multicast stream from the first VLAN to each VLAN (using multicast routing table, see fig.3) in which there is a multicast group member registered to receive the multicast stream (multicast group, see 316 fig.3); and (b) switching the multicast stream from each VLAN in which it is present in a cross-VLAN switching device towards substantially all of the multicast group member registered to receive the multicast stream (registered in routing table, see fig.3)."

Regarding claim 3, Tang discloses, "wherein the step of routing the multicast stream comprises the step of decrementing the time-to-live counter of the packets of the multicast stream (decrements TTL, see col.19, ln.59)."

Regarding claim 4, Tang discloses, "wherein the method further includes the step of registering the one or more multicast group members at the cross-VLAN switching device (fig.3), each registration constituting a subscription to the multicast stream (col.8, ln.65-col.9, ln.1)."

Regarding claim 5, Tang discloses, "wherein the step of registering the one or more multicast group members at the cross-VLAN switching device comprises the step of recording multicast group members subscriptions in one or more VLAN/multicast group membership tables (group table, see fig.3)."

Regarding claim 6, Tang discloses, "wherein the one or more VLAN/multicast group membership tables of the cross-VLAN switching device associate a multicast address (multicast group address, see fig.3) and an IP address of the one or more multicast group members (fig.2)."

Regarding claim 7, Tang discloses, "wherein the method further includes the step of receiving, prior to the step of registering (col.14, ln.66), a multicast declaration message (IGMP message, see col.14, ln.67) from a plurality of the one or more multicast group members (col.15, ln.1-4)."

Regarding claim 8, Tang discloses, "wherein the multicast declaration message from the plurality of the multicast group members is an IGMP Membership Report message (IGMP, see col.2, ln.62-67)."

Regarding claim 10, Tang discloses, "wherein the method further includes the step of de-registering a multicast group member at the cross-VLAN switching device, each de-registration constituting a rescission of the subscription to an associated multicast stream (release, see col.23, ln.18 and col.24, ln.36-43)."

Regarding claim 11, Tang discloses, "wherein the method further comprises the step of receiving, prior to de-registering a multicast group member, a leave message from a plurality of the one or more multicast group members to rescind the subscription to the associated multicast stream (advertisement message, see col.24, ln.36-43)."

Regarding claim 23, Tang discloses a cross-VLAN switching device, comprising:

(a) a management module (multicast controller, see 302 fig.3) comprising one or more VLAN/multicast group membership tables (table for 316 fig.3) for registering multicast group membership subscriptions (subscribe, see col.8, ln.65-col.9, ln.3); and

(b) a packet forwarding engine (routing table, see 308 fig.3) for: (i) switching unicast (a single copy, see col.19, ln.55-57) packets within each of the plurality of VLANs (VLANs, see 102 & 104 fig.1); and (ii) routing one or more multicast packets (multicast routing table, see fig.3) between the plurality of VLANs (fig.1) in accordance with the multicast group membership subscriptions of the one or more VLAN/multicast group membership tables (group tables for VLAN domains, see col.7, ln.30-37); wherein transmission of one or more duplicative multicast packets across VLAN tag-aware communications links (as shown in fig.1) is minimal (avoid replication of a message, col.21, ln.35-36).

Regarding claim 24, Tang discloses a multicast optimization method, the method comprising the steps of:

(a) receiving at a third node (R3, see 126 fig.1) a packet destined for the multicast group (VLAN domains within VLAN region, see 102 fig.1);

(b) transmitting the packet from the third node (creates a single copy at R3, see col.19, In.55-57) to a first node (first VLAN, see 102 fig.1) on a first path (132 fig.1); and

(c) transmitting the packet from the third node to the second node (second VLAN, see 104 fig.1) on a second path (136 fig.1), wherein the first path (136 fig.1) and the second path (132 fig.1) include a common VLAN-tagged link supporting the first VLAN (104 fig.1) and the second VLAN (102 fig.1), and wherein the packet traverses the common VLAN tagged link once (a single copy of multicast message, see col.19, In.55-57).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tang in view of Wu et al. (US 6847638, "Wu").

Regarding claim 12, Tang lacks what Wu discloses, "wherein the leave message is an IGMP Leave message (col.5, In.35-38)." Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to apply IGMP leave message taught by Wu into the release method of Tang in order to reserve unused resource with the motivation of standard compliance.

Allowable Subject Matter

6. Claims 15-22 are allowed.

7. Claims 9, 13, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

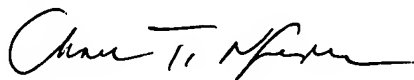
Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung Park whose telephone number is 571-272-8565. The examiner can normally be reached on Mon-Fri during 6:15-3:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JP
Jung Park
Patent Examiner



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